

FY-2004/05 PROPOSED SCOPE OF WORK for:
Gunnison River programmatic biological opinion coordination

Project #: 113

Lead Agency: U.S. Fish and Wildlife Service
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Category:

- ☐ Ongoing project
- ☒ Ongoing-revised project
- ☐ Requested new project
- ☐ Unsolicited proposal

Expected Funding Source:

- ☒ Annual funds
- ☐ Capital funds
- ☐ Other

I. Title of Proposal:

Coordinate development of a programmatic biological opinion for the Gunnison River Basin that addresses the impacts to the endangered fishes of the Upper Colorado River Basin due to operation of the Aspinall Unit and existing and foreseeable future water depletions from the Gunnison River to meet human needs.

II. Relationship to RIPRAP:

Colorado River Action Plan: Gunnison River
1.A. Identify fish habitat and flow needs.

III. Study Background/Rationale and Hypotheses:

The Gunnison River, the largest tributary to the Colorado River in Colorado, is considered important for its direct and indirect contributions to the recovery of the endangered fish species in the Upper Colorado River Basin: Colorado pikeminnow, humpback chub, bonytail, and razorback sucker (Tyus and Saunders 2001, Table 1). Recently published Recovery Goals for the Colorado pikeminnow and razorback sucker also recognize the Gunnison River for its potential to support self-sustaining populations of these species (USFWS 2002a,b).

The hydrology of the Gunnison River has been modified by a series of three dams and reservoirs, Blue Mesa, Morrow Point, and Crystal, collectively known as the Aspinall Unit, operated by the U.S. Bureau of Reclamation (USBR) for water supply, hydro-electric power generation and flood control. In addition, there are numerous other federal and non-federal water projects that deplete water from the Gunnison River and its tributaries.

Nevertheless, the Gunnison River not only provides habitat for Colorado pikeminnow and razorback sucker, but its flows contribute to creation and maintenance of habitats for all four species on the Colorado River from the Gunnison River confluence at Grand Junction downstream to Lake Powell. The U.S. Fish and Wildlife Service (FWS) recently adopted flow recommendations for the Gunnison River and the Colorado River downstream from the Gunnison River confluence (McAda 2003).

Table 1. Relative contributions of tributaries and obstacles to endangered species recovery (adapted from Tyus and Saunders 2001).

Tributary	Contributions to Recovery			Rank ^b	Obstacles to Recovery
	Direct	Indirect ^a	Total		
Green River Subbasin					
Yampa River	5	14	19	1*	Nonnatives
Little Snake River	3	11	14	5*	Nonnatives
Tributary Green River ^c	4	6	10	6*	Flow regulation, temperature, nonnatives
Duchesne River	3	6	9	8	Flow depletion, nonnatives
White River	3	12	15	4	Barrier, nonnatives
Price River	2	5	7	10	Flow depletion
San Rafael River	3	5	8	9	Flow depletion
Colorado River subbasin					
Tributary Colorado ^d	4	14	18	2*	Barriers
Plateau Creek	1	6	7	10	Barriers
Gunnison River	4	13	17	3	Barriers, water quality
Dolores River	1	9	10	6	Water quality(?)
Lake Powell					
Dirty Devil Arm	1	5	6	12	Little prospect of recovery
Escalante Arm	1	5	6	12	Little prospect of recovery

^a Weighted score based on 1 point for low, 2 points for medium, and 3 points for high values in each of 5 different flow/sediment attributes

^b Ranked by total score (* covered by an existing or imminent PBO or BO.)

^c Upstream from Yampa River – covered by Flaming Gorge BO

^d Upstream from Gunnison River – covered by Colorado River (“15-mile reach”) PBO

These flow recommendations call for peak flows of 8,070 cfs for a long-term average duration of 20–32 days per year, and peak flows of 14,350 cfs for a long-term average duration of 4–7 days per year. In addition, instantaneous peak flows $\geq 15,000$ cfs were recommended under “wet” hydrologic conditions; 14,350–16,000 cfs under “moderately wet” conditions; $\geq 14,350$ cfs under “average wet” conditions; $\geq 8,070$ cfs under “average dry” conditions; $\geq 2,600$ cfs under “moderately dry” conditions; and 900–4,000 cfs under “dry” conditions. “Wet” hydrologic conditions are exceeded an average of only 1 year in 10 (i.e., wettest 10% of years), whereas “dry” conditions are exceeded 9 years out of 10 (i.e., driest 10% of years). The remaining 80% of years are divided equally (i.e., 10–30%, 30–50%, 50–70%, 70–90%) among the other four hydrologic categories (McAda 2003).

To achieve these flow recommendations, the current operation of Aspinall Unit Dams may need to be modified. The USBR will evaluate whether flow recommendations can be met within its existing operating criteria for the Aspinall Unit, or whether these criteria can be modified to meet the flow recommendations without significantly impacting the authorized purposes of the Aspinall Unit. Operation/re-operation of the Aspinall Unit by the USBR will serve as the basis for an inter-agency consultation under Section 7 of the Endangered Species Act (ESA). The product of such consultation would be a programmatic biological opinion (PBO) rendered by the FWS. The PBO may encompass existing depletions from both federal and non-federal water development projects in the Gunnison River Basin.

In addition, an increment of foreseeable future depletions may also be evaluated for its potential impacts to threatened and endangered species. The USBR, in consultation with the Colorado Water Conservation Board (CWCBC), will specify the volume of water depletions to be covered. The Recovery Program will identify and implement specific recovery actions to offset the impacts of these depletions and to promote recovery of the endangered fishes. These recovery actions will include provision for and protection of instream flows, habitat restoration and maintenance, nonnative fish control, endangered fish stocking and monitoring endangered fish populations and their habitats.

IV. Study Goals, Objectives, End Product:

A. Goal: The goal of this project is to contribute to recovery of endangered fishes while allowing water depletions for current and foreseeable future human needs to continue in accordance with state water law and interstate compacts.

B. Objectives:

1. Develop a framework to address issues raised by Recovery Program participants and others.
2. Review/update consumptive use (demand) projections describing the amount of water that is needed to meet current and future human needs.
3. Determine the role of the Gunnison River in the recovery of the endangered fishes.

4. Describe when and how much water should be released from the Aspinall Unit to meet the seasonal flow needs of the endangered fishes under current and future demand conditions.
5. Determine if existing diversion structures and natural barriers impede fish migration and develop appropriate remedies.
6. Determine if the existing thermal regime limits the range of endangered fishes, the extent to which these fishes might benefit if the thermal regime were modified, and the practicability of modifying the thermal regime.
7. Develop management actions to reduce/minimize impacts on native fishes due to the presence of competitive and predatory nonnative fishes.
8. Facilitate development and implementation of a PBO for the Gunnison River Basin.

C. End Products:

1. Flow recommendations report (completed 2003)
2. Water demand estimate (pending)
3. Draft BA/EA/EIS (USBR)
4. Final BA/EA/EIS (USBR)
5. Programmatic Biological Opinion (FWS in consultation with USBR)

V. Study area:

The geographic scope of depletions to be considered in the Gunnison River PBO is the Gunnison River and its tributaries from their headwaters downstream to the Colorado River at Grand Junction, Colorado. Because Colorado pikeminnow and razorback sucker are migratory species, recovery actions taken in the Grand Valley of the Colorado River also may benefit populations of these species that use both rivers.

VI. Study Methods/Approach

Overall direction for development of the PBO will be provided by a workgroup, comprised of representatives from the USBR, FWS, Western Area Power Administration (WAPA), National Park Service (NPS), other federal agencies, as appropriate, CWCB, environmental groups, water users, and other Gunnison Basin stakeholders. The USBR, in cooperation with the CWCB, will model basin hydrology using CDSS and Riverware to investigate alternative operations of the Aspinall Unit to meet the FWS flow recommendations while allowing for future water development. USBR reoperation of the Aspinall Unit will be considered the federal action for the purposes of fulfilling NEPA and ESA requirements. USBR is the lead agency with NPS, FWS and/or WAPA as potential cooperating agencies.

VII. Task Description and Schedule

1. Determine the role and relative importance of the Gunnison River to the recovery of the endangered fishes (March 2001).
2. Determine when and how much water is needed to augment instream flows in the Gunnison River to benefit the endangered fishes (June 2003).
3. Estimate current and foreseeable future (ca. 2050) depletions from the Gunnison River and its tributaries (March 2002, pending confirmation or modification).
4. Identify and evaluate alternative Aspinall Unit operations to serve FWS flow recommendations under current and foreseeable future depletions (July 2003 – June 2004).
5. Gunnison River Temperature Model Development and Scenario Testing
 - a. Preliminary feasibility assessment of modifying water temperatures in the Gunnison River downstream from the Aspinall Unit to benefit native fishes (December 2001).
 - b. Determine feasibility of increasing water temperatures in the Gunnison River near Delta, Colorado, through structural and/or operational modifications to Aspinall Unit dam(s) (July 2003).
6. Evaluate fish passage/entrainment issues at Hartland Diversion and recommend appropriate remedial measures (deferred pending completion of Task 5).
7. Prepare Draft EA/EIS and initiate Section 7 consultation (June 2005).
8. Prepare Final EA/EIS (September 2005).
9. Final (programmatic) biological opinion (December 2005).
10. Public Involvement Activities: Implement public outreach activities to obtain public input in developing the Gunnison River Management Plan and promote acceptance of the plan (ongoing).
11. Technical Project Support and Coordination. Provide technical support and coordination related to the development of the Gunnison River Management Plan:
 - a. Preparing/reviewing scopes of work related to development and implementation of the management plan
 - b. Coordinating activities of Gunnison workgroup
 - c. Coordinating public involvement activities
 - d. Responding to requests for information
 - e. Performing staff work for the Gunnison workgroup
 - f. Writing, reviewing and/or synthesizing documents

VIII. FY-2004 Work

Task 3. Estimate future human water demands

Deliverables: Final demand projections ca. 2050

FY 2004 Budget: \$0 — funded in FY 2001 (see SOW for Project # C-30)

Task 4. Identify and evaluate alternative Aspinall Unit operations to serve FWS flow recommendations under current and foreseeable future depletions

Deliverables: CRDSS/Riverware model runs; annual report(s)

FY 2004 Budget: \$0 — USBR/CWCB (also see SOW for Project #s 19B & 71)

Task 6. Evaluate fish passage/entrainment issues at Hartland Diversion and recommend appropriate remedial measures

Deliverables: Report of findings

FY 2004 Budget: \$0 (see PD's Program Management SOW)

Task 10. Public Involvement Activities

Deliverables: Separate scope of work and annual report

FY 2004 Budget: \$0 (see SOW for Project # PIP-12K)

Task 11. Technical Project Support and Coordination

Deliverables: Scope of work; annual work plan; annual report

FY 2004 Budget: \$0 (see PD's Program Management SOW)

FY-2005 Work

Task 4. Identify and evaluate alternative Aspinall Unit operations to serve FWS flow recommendations under current and foreseeable future depletions

Deliverables: Final report; preferred alternative

FY 2005 Budget: \$0 — USBR/CWCB (also see SOW for Project #s 19B & 71)

Task 7. Prepare Draft EA/EIS

Deliverables: Draft EA/EIS

FY 2005 Budget: \$0 (USBR)

Task 8. Prepare Final EA/EIS

Deliverables: Final EA/EIS

FY 2005 Budget: \$0 (USBR)

Task 10. Public Involvement Activities

Deliverables: Public Involvement Plan

FY 2005 Budget: \$0 (see SOW for Project # PIP-12K)

Task 11. Technical Project Support and Coordination

Deliverables: Scope of work; annual work plan; annual report

FY 2005 Budget: \$0 (see PD's Program Management SOW)

IX. Budget Summary

	<u>FY 2004</u>	<u>FY 2005</u>	<u>TOTAL</u>	<u>COMMENTS</u>
Task 1:	—	—	—	completed in FY 2001
Task 2:	—	—	—	completed in FY 2003
Task 3:	\$0	—	\$0	funded in FY 2001
Task 4:	\$0	\$0	\$0	Project #s 19B & 71
Task 5:	—	—	—	completed in FY 2003
Task 6:	\$0	—	—	Program Management
Task 7:	—	\$0	\$0	USBR
Task 8:	—	\$0	\$0	USBR
Task 9:	—	\$0	\$0	FWS
Task 10:	\$0	\$0	\$0	Project # PIP-12K
Task 11:	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	Program Management
	\$0	\$0	\$0	

X. Reviewers:

FWS (Bob Muth, Angela Kantola, George Smith)
BR (Brent Uilenberg, Bob Norman)

XI. References

McAda, C. W. 2003. Flow recommendations to benefit endangered fishes in the Colorado and Gunnison rivers. Prepared for the Upper Colorado River Endangered Fish Recovery Program. Recovery Program Project No. 54. Denver.

Tyus, H.M. and J.F. Saunders. 2001. An evaluation of the role of tributary streams for recovery of endangered fishes in the Upper Colorado River Basin, with recommendations for future recovery actions. Final Report to Upper Colorado River Endangered Fish Recovery Program; Project No. 101. Univ. of Colorado, Boulder.